

## ABSTRACT OF THE DISCLOSURE

Methods and devices are provided for at least reducing the mineral content of a vascular calcified lesion, i.e. a calcified lesion present on the vascular tissue of a host. In the subject methods, the local environment of the lesion is maintained at a subphysiologic pH for a period of time sufficient for the mineral content of the lesion to be reduced, e.g. by flushing the lesion with a fluid capable of locally increasing the proton concentration in the region of the lesion. Also provided are systems and kits for practicing the subject methods. The subject methods and devices find particular use in the treatment of vascular diseases associated with the presence of calcified lesions on vascular tissue.